

**Brigadier General Robert P. Lennox**  
**Chief of Air Defense Artillery and Commanding General of Fort Bliss, Texas**

# NetFires Center of Excellence

## *An Exciting Place to Be*

Interview by Patrecia Slayden Hollis

**Q** What do you see as the strengths of the Air Defense Artillery [ADA] and Field Artillery [FA]? Is it time to merge the two branches? If so, why and in what time frame? If not, why not?

**A** Before I answer, I want to say that the Lennoxes already are a NetFires family. My brother and two nephews are Field Artillerymen, and we work well together. So I think that's a sign for the future.

Strengths of the US Air Defense Artillery? We are the only branch in the world that can execute the ballistic missile fight—use Patriot missiles to shoot down theater ballistic missiles [TBMs]. No other Army in the world has that capability, even those that have the missile systems. So I think we are very good in our lane, which is a defensive lane that enables maneuver commanders to complete their operations.

Field Artillerymen also do what they do better than Redlegs in any other Army in the world: influence the battle with cannon, rocket and missile fires and stand arm-in-arm with their maneuver commanders, ensuring success on the battlefield.

So in terms of professionalism, in terms of commitment to doing the right things, I think both branches are world-class. I'm excited about the opportunity to work with Field Artillerymen to write new doctrine and develop new concepts.

About merging the two branches into one...from the Army's perspective, there's a lot to be said for merging the two branches. I think that as we move forward in collocating the Air Defense with the Field Artillery at Fort Sill, Oklahoma, as the Netfires Center of Excellence, it will become evident there are benefits to having one branch.

If you look at the Combined Arms Support Command, CASCOM [Fort Lee, Virginia], it has been a center of excellence for as long as I can remember, but Quar-



termaster, Ordnance and Transportation have retained their branch identities.

Now in the case of the Air Defense and Field Artillery, the "whole may be better than the sum of our individual parts." But, at this point, we don't know if that's the way to go. As General Ralston [Major General David C. Ralston, Chief of Field Artillery] and I move forward on establishing the NetFires Center, we'll recommend that ADA and FA become one branch if it makes sense for the Army.

**Counter-Rocket, -Artillery and -Mortar (C-RAM)** is a multi-branch program to counter enemy indirect fires in the Global War on Terrorism (GWOT). Its purpose is to improve persistent surveillance on the enemy, enhance the fusion of sensors that acquire the enemy and facilitate both proactive and reactive responses to enemy indirect fire. The tenets of the program and the branch responsibilities are as follows: Field Artillery (in consultation with Military Intelligence)—Shape, Sense, Respond, Warn, and Command and Control; Air Defense Artillery—Intercept; and Engineers—Protect.

**Q** Please explain the overall operations of the C-RAM program, including the general responsibilities of FA and ADA and how they are integrated.

**A** I'm excited about C-RAM. Part of the Field Artillery's mission is counterfire. So it's logical that in the last couple of years we've integrated ADA and FA capabilities into one unit under one unit commander to conduct C-RAM.

We have integrated the FA sensors—Q-36, Q-37 Firefinders and lightweight countermortar radar, the LCMR—and coupled them with other sensors that can identify an incoming threat with such precision that only a portion of a FOB [forward operating base] needs to be warned to take cover. Everyone else can keep working. Based on the sensor piece alone, the threat of a mortar attack does not paralyze an entire unit or base anymore.

The Air Defense's piece is to clear the airspace. We're tied into the joint air picture, so we know what's flying up there. That is coupled with both ADA and FA strike capabilities—striking the threat round in the air, if possible, or counterstriking the threat firing unit, both with munitions or ground forces. Taking out a projectile in the air coming at you, which is what C-RAM's Phalanx gun does, is our forte. [Phalanx is a land-based version of the Navy's six-barrel, 20-mm gun, which is similar to the ADA's Vulcan gun.]

So what we've done is optimize the best of both branches in one program. Together, we are like a boxer, each of us with one hand: the FA throws the punch and the ADA blocks. Those capabilities are now inside one thinking C-RAM team.

If you expand that concept across the battlefield, we could build such a team for the operational and strategic levels of the counter-Scud fight we've been conducting with Patriots and joint fires for years—not just at the tactical level for C-RAM. So C-RAM has got a lot of

## INTERVIEW

implications for NetFires. C-RAM is a “seed” that we can grow the two ends of the spectrum into NetFires. For me, that means getting our command and control systems right. I think C-RAM is very relevant and timely.

**Q** *What is your immediate vision for ADA as part of the Army’s NetFires Center of Excellence at Fort Sill? What kinds of synergy and shared functionality do you envision?*

**A** Critical for ADA is developing a system of systems capability inside ADA systems. Right now, I can sense a target with the Patriot radar, but I can’t pass that to the developmental SLAMRAAM [surface-launched advanced medium-range air-to-air missile] to intercept a target. I’m not netted, even internally to ADA systems. [See Page 6 for descriptions of SLAMRAAM and other developmental systems.]

We have a path ahead, what we call “Increment II,” to design and procure systems to give us an integrated fire control capability that will allow us to see with any sensor and strike targets with any platform. And that goes across our weapons systems, from the future JLENS [joint land-attack cruise missile defense elevated netted sensor] to Patriot and SLAMRAAM.

The NetFires Center concept has opened up new doors for us. How do we expand our strike capabilities? How do we ensure we can talk seamlessly from a sensor, for example, JLENS, an elevated system that will be able to sense moving targets, and send that data to a shooter—any shooter? How do we build those capabilities into and share information with other Army and joint systems? What is the right command and control solution? That last piece is critical.

General Ralston and I have talked about locking all our smart people in a room to brainstorm where our two branches go from here. I think that establishing the “virtual” NetFires Center of Excellence on 1 June will cause a virtual “walk down the hall with a cup of coffee in hand” to talk about what each branch is doing, how we can operate together and share ideas to make NetFires grow. We will see benefits from and synergies develop as our junior officers and field grades work closely together for the first time.



SLAMRAAM, shown here, and JLENS will give the ADA the ability to attack incoming cruise missiles at greater ranges.

**Q** *What are your other priorities for the next five or so years?*

**A** Everything we do is joint in air defense. Most of our firing is by permission of the joint force air component commander (JFACC), through his chain of command, through regional and sector air defense commands. So everything we do *must* be tied into the joint network and joint command and control.

Then we’re developing new concepts. For example, C-RAM fills a combat requirement. Another gap for ADA is cruise missile defense. Worldwide, the cruise missile threat is growing exponentially.

Because cruise missiles come in very low, they are hard to detect or strike until they are close to our Soldiers, systems or other national assets we’re trying to defend. How do we “buy back” that battlespace and hit them at longer ranges? JLENS and SLAMRAAM will give us the ability to attack incoming cruise missiles at much greater ranges.

Another material priority for the ADA is MEADS, the medium-extended air defense system we are building with the Italians and Germans. But we need MEADS capabilities now. So, we are accelerating MEADS technologies as they become available and putting them into Patriot. In effect, we are morphing Patriot into MEADS over the next several years.

In terms of organizational priorities, we are transforming the ADA force, building air and missile defense [AMD] battalions. We’re building these modular composite battalions with Patriots and Avengers to allow commanders at all

levels to fight those systems.

Could we send a Patriot-Avenger battalion to work with a Fires Brigade? Absolutely. What’s the right command and control system for that to happen? Could the FA have a fires capability that works with the Air Defense brigade? Absolutely. These are some of the areas we need to explore as part of the NetFires Center.

When ADA physically moves to Fort Sill in the next couple of years, my goal is to integrate the schools, not just collocate them. For example, we need battle labs next to battle labs and combat developments next to combat developments, so we can grow them together very rapidly.

If there is value added in integrating some aspects of the schools before we actually move to Fort Sill, then we need to make it happen. If it doesn’t make sense to integrate something, then we won’t do it. We owe it to the Army to get it right.

**Q** *Field Artillerymen are performing a variety of nontraditional missions in Afghanistan and Iraq. What nontraditional missions have Air Defenders performed in the Global War on Terrorism?*

**A** Our nontraditional missions are similar to some of the FA’s. We have a gun-truck battalion deployed in Iraq now, 2-44 ADA [2nd Battalion, 44th Air Defense Artillery] in the 101st Airborne Division. It provides convoy escorts. Last year, 4-5 ADA defended and cleared the route from Baghdad International Airport to the Green Zone.

Also like the FA, we’ve had some circumstances where our Air Defenders have had to conduct traditional missions simultaneously with the nontraditional missions, such as manage airspace or monitor our elevated sensor in Iraq. Our Air Defenders had to adapt back and forth very rapidly. We’re *incredibly* proud of our officers, NCOs and Soldiers for getting the job done—whatever job was demanded of them. I think that’s a common theme across both branches.

**Q** *How does ADA leverage fires during joint AMD operations?*

**A** Our 32nd AAMDC, which stands for the 32nd Army Air and Missile Defense Command, conducts joint

Photo courtesy of Raytheon

## INTERVIEW

AMD. Each theatre has an AAMDC, which is commanded by a brigadier general who is dual-hatted as the Air Defense commander for the joint force land component commander [JFLCC] and also works for the JFACC.

The JFACC has an ISR [intelligence, surveillance and reconnaissance] team that searches for Scuds. Integrated with the ISR team in the combined air operations center [CAOC], AAMDC personnel take the lead on the Scud missile searches. When the team finds a target, it nominates the Scud for execution through the regular air operations center processes with the BCD [battlefield coordination detachment] involved in the decision as to which Army or joint fires asset will strike the target. So we work hand-in-hand with Field Artillerymen in the BCD to bring fires to bear on the Scuds.

At the tactical level, we work C-RAM; at the theater level, we work targeting for joint air-missile defense. It's up to us to integrate these two ends of the spectrum into what will become the NetFires concept. There has been some discussion about integrating FA and ADA personnel on the ISR team in the CAOC and in the BCD to enhance the linkage and improve the organizations

as part of NetFires.

**Q** *What are the most significant changes in ADA as part of the Army's transformation?*

**A** As mentioned earlier, the composite Patriot-Avenger battalion is one of our biggest changes. We have taken all our SHORAD [short-range air defense] battalions out of the divisions and are forming these composite AMD battalions that, today, have four Patriot batteries and a large Avenger battery. Tomorrow, SLAMRAAM will replace Avenger, giving us the ability to conduct TBM defense and cruise missile defense in one package. So based on the threat, we will be able to provide the warfighter a modular package capable of deploying as a battalion or as part of an AMD brigade.

We've stood up two composite battalions already: 1-44 ADA at Fort Bliss and 1-43 ADA in Korea. Our plan is to stand up a total of five battalions in the next two years.

Early in OIF [Operation Iraqi Freedom], we still were organized as SHORAD and HIMAD [high-to-medium air defense] battalions. But we didn't have the command and control systems

to work across the two types of units. SHORAD and HIMAD had distinct cultures that supported different levels. The short-range SHORAD units supported divisions while the HIMAD Patriot Air Defenders supported corps and theater commands. So now we have the shorter and longer range capabilities internal to the same unit.

Today, we're training officers in the combined skills needed for both systems and are planning to realign our enlisted MOS [military occupational specialties] to ensure leaders and Soldiers can move from one system to the other within the same unit. Right now, we have MOS for SHORAD and MOS for HIMAD.

We are looking at three MOS: launcher, sensor, and command and control. The vision is to have one set of launcher experts for SLAMRAAM, Patriot or THAAD, the latter our future theater high-altitude air defense system; one set of sensor experts on the Sentinel radar at the short range to our Patriot sensor, JLENS, MEADS sensors, and to our THAAD sensor; and command and control that spans these systems as well. This realignment of MOS will give us more flexibility to assign people. Ultimately, it will reduce the number of ADA MOS.

**Surface-Launched Advanced Medium-Range Air-to-Air Missile System (SLAMRAAM)** will begin replacing the Avenger in FY09 in composite Patriot-Avenger battalions, extending the short-range air defense engagement envelope beyond visual identification range. It will address the threat posed by cruise missiles, unmanned aerial vehicles and unmanned combat aerial vehicles. SLAMRAAM will be able to destroy aerial targets being masked by terrain or clutter, operating in reduced visibility or employing standoff capabilities beyond the range and altitude of our current Stinger-based weapons. In attacking cruise missiles or other targets over-the-horizon, it will use an elevated sensor platform—the joint land-attack cruise missile defense elevated netted sensor (JLENS).

**Joint Land-Attack Cruise Missile Defense Elevated Netted Sensor (JLENS)** will be able to detect small aerial targets at long ranges and provide precise fire control data to Air Defense units. JLENS elevated dual-aerostat system provides two radars, one for wide-area surveillance at long ranges and one for shorter ranges

with precision tracking for long duration missions. The focus is on providing data for attacking cruise missiles and other moving targets, such as large-caliber rockets. JLENS will be able to detect the target's ascent phase, track the target and determine the launch-point estimate. It will be fielded in FY11 in batteries assigned to brigade combat teams (BCTs).

**Medium-Extended Air Defense System (MEADS)** is being developed in cooperation with Germany and Italy. MEADS technology is being spiraled into Patriot missiles incrementally rather than waiting 15 years for a total missile replacement. In the first phase, Patriots will receive a battle management command, control, communications, computers and intelligence (BMC4I) station to improve situational awareness and allow for force operations and engagement operations from a single shelter. Phase two is the fielding of a lightweight launcher capable of near-vertical tube positioning that facilitates 360-degree coverage. In the third phase, Patriot batteries will receive two multifunctional fire control radars and one sensor radar, all mounted on the fam-

ily of medium tactical vehicles (FMTVs). This will allow for a mobile 360-degree defense against medium and short range tactical ballistic missiles, unmanned aerial vehicles, hostile aircraft, jammers and cruise missiles.

**Terminal High-Altitude Area Defense System (THAAD)** is a ground-based terminal phase launcher-radar to defend against short- and medium-range ballistic missiles, both inside and outside the atmosphere, significantly mitigating the effects of weapons of mass destruction (WMD). It has the growth potential to defeat intermediate-range ballistic missiles. It's launcher is in a mobile, tactical fire unit with eight missiles per launcher and three launchers per fire unit. It's radar provides early warning to the specific location threatened by a ballistic missile and precise tracking of the missile, including in flight data updates, plus an accurate determination of the missile launch point. THAAD will be able to operate as a stand-alone fire unit or, more often, with a Patriot battalion, forming an AMD task force. The first fire unit will be fielded in FY09.



## INTERVIEW

Also, we are standing up Air Defense airspace management [ADAM] cells in the modular BCTs [brigade combat teams] and divisions. The cells analyze the fight from the perspective of the third dimension, and for the brigade and division commanders, they provide airspace situational awareness and manage the commanders' airspace.

Right now, the ADAM cell is not in the BCT's FEC [fires and effects cell] or the division's JFEC [joint FEC]. In the BCTs, they work in the S3 shops, and in the divisions, they work in the TACs [tactical command posts]. Could the FEC or JFEC be the place for the ADAM cell in the future? Maybe.

**Q** What message would you like to send Field and Air Defense Artillerymen stationed around the world?

**A** Historically, we're out of the same branch, the Artillery, because the Army needed people smart enough to compute mathematical solutions for a variety of targets and firing assets in multiple dimensions. At the same time, the Artilleryman had to be pretty tough to handle powder bags and shells and wrestle the guns into positions to engage the enemy. So, from our common stock of smart, tough warriors, we've got a great future ahead of us.

The NetFires Center of Excellence will be an *exciting* place to be.

**Brigadier General (Promotable) Robert P. Lennox is the Chief of Air Defense Artillery and Commanding General of Fort Bliss,**

Texas, where he also served as Deputy Commanding General in an earlier tour. His previous assignment was as the Deputy Commanding General and Chief of Staff of the Army Accessions Command, Training and Doctrine Command, Fort Monroe, Virginia. He also served as the Deputy Commanding General for the Army Space Command/Deputy Commanding General for Operations in the Army Space and Missile Defense Command, both in Colorado Springs, Colorado. He commanded the 108th Air Defense Artillery Brigade at Fort Bliss; and the 1st Battalion, 2nd Air Defense Artillery (1-2 ADA), an Avenger battalion organic to the 108th Brigade at Fort Stewart, Georgia. He deployed to Saudi Arabia as the Executive Officer for 4-43 ADA (Patriot) for Operation Determined Resolve. He holds two master's degrees, including one in National Security Strategy from the National War College in Washington, DC.

# 2005 Hamilton Award Winner

## B/2-162 FA, 192nd SIB, PRANG

**B**attery, 2nd Battalion, 162nd Field Artillery (B/2-162 FA), Puerto Rico Army National Guard (PRARNG), has won the Alexander Hamilton Best ARNG Battery Award for 2005. Captain Jose J. Cruzado commands the battery with NCO leader First Sergeant Jorge Diaz. Bravo Battery has performed extremely well and clearly will maintain its excellent attitude and motivation for future missions. 2-162 FA supports the 92nd Separate Infantry Brigade (SIB).

Named for Alexander Hamilton, a Revolutionary War artilleryman and American statesman, the Hamilton Award was established in 2002. It annually recognizes a high-performing ARNG battery based on specific criteria and a performance narrative. (For more information, see the website "Knox, Hamilton and Gruber Awards" at <http://sill-www.army.mil/awards/default.htm>.)

B/2-162 FA is Number One in Quality Force Indicator (QFI) percentages for 2005, a measure of unit readiness in the National Guard. For example, the battery's reenlistment rate was 99 percent—thanks to the participation of the unit's families. One hundred percent of the battery's personnel are military occupational specialty qualified (MOSQ).

Because of their high motivation, B/2-162 FA's Soldiers are well trained and take responsibilities leading to promotions. The unit's promotions include one staff sergeant promoted to sergeant first class, five sergeants promoted to staff sergeant, and five specialists promoted to sergeant. Also, 18 Soldiers earned Army Achievement Medals this past year.

B Battery has consistently "gone the extra mile" and won the Best Firing Unit for two consecutive years at Annual Training (AT) 2004 and AT 2005 at Camp Blanding, Florida. During AT, B Battery conducted realistic and relevant training as a team.

B Battery also earned the Best Unit in Administration award during 2005.

All Soldiers maintain the Army and civilian values. These values help develop a cohesive, well prepared and motivated team that can accomplish any mission.

The Soldiers have unique pride and are as committed to equipment readiness as they are to Soldier readiness. Five areas were inspected during a command maintenance evaluation team (COMET) inspection by the Deputy Chief of Staff for Logistics (DCSLOG) on 13 October. During the



B/2-162 FA live fires during Annual Training 2005 in Florida.

battery's inspection, all five areas were in compliance with Army and local inspection standards with four of those areas deemed commendable. This kind of result is always a team effort.

During 2005, the battery was involved in several non-mission-essential task list (METL) missions. One of these missions included supporting security units and helping to build schools in Nicaragua in April. Then, B Battery deployed to Europe to secure Air Force bases in support of Operation Enduring Freedom (OEF). B Battery Soldiers also were involved in support and security operations for areas affected by Hurricane Katrina in New Orleans, Louisiana.

B Battery, with its high-performing Soldiers and leaders, will lead the battalion to win in combat.